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Inside Wallops

Replica of Historic 1903 Wright Flyer to be Displayed

The first full-scale replica of the historic 1903 Wright Flyer has arrived at NASA's Ames Research Center in preparation for public display this spring and wind tunnel tests next January.

The replica is scheduled for a two-week test in Ames' 80-foot x 120-foot wind tunnel. During the test, project engineers will study the replica's stability, control and handling at speeds up to 30 mph in the wind tunnel. Test results will be used to compile an historically accurate aerodynamic database of the Wright Flyer.



The Wright Flyer

Constructed by a team of volunteers from the Los Angeles section of the American Institute of Aeronautics and Astronautics (AIAA), using plans provided by the Smithsonian, the replica features a 40-foot-4-inch wingspan reinforced with piano wire, cotton wing coverings, spruce propellers and a double rudder.

"I can't think of anything as exciting as using modern technology to test a replica of the biplane that Orville and Wilbur Wright flew for the first time ever in 1903 at Kitty Hawk," said Pete Zell, Ames' wind tunnel test manager. "NASA is here as a resource for the public and to inspire young people. This project seeks to educate and inspire youth; it's much more than dollars and cents."

Although it will replicate the 1903 Wright Flyer in design, size, appearance and aerodynamics, some changes have been made to strengthen the plane when it is mounted in the wind tunnel.

The full-scale replica was built with precise data using Smithsonian drawings from the original airplane. Data obtained from testing on this full-scale replica will provide a sound technical basis for improving the flying qualities and safety for the second full-scale airplane — yet to be constructed. In the wind tunnel, the replica will be powered by a NASA electric motor.

"The work of the Wright Brothers founded the science and technology of aeronautics, and their accomplishments form one of the grandest chapters in history," said Jack Cherne, TRW engineer and chairman of the Wright Flyer Project.

In contrast to the Wright brothers, who took less than a year to build their biplane, AIAA volunteers have spent their Saturdays for the past 18 years planning and assembling the replica.

It also has undergone special testing as a prerequisite for entering the NASA wind tunnel. One stipulation was static testing, in which more than three times the flight load (or more than 3,000 pounds) was applied successfully. Another NASA requirement was propeller system testing, recently completed at Able Corp. in Yorba Linda, CA.

Upon completion of the wind tunnel tests, the replica will be transported to Los Angeles, where it will be put on permanent display in the lobby of the Federal Aviation Administration (FAA) Western Pacific Regional Office in Hawthorne, CA.

Using the wind tunnel test data, a second Wright Flyer will be built by the AIAA volunteers and flown on Dec. 17, 2003, commemorating the 100th anniversary flight of Orville and Wilbur Wright at Kitty Hawk, NC. During a recreation of the Wright brothers' first flight, the replica will fly low and travel at only 30 mph, the same speed flown by the Wright brothers, whose flight only traveled 120 feet during its 12 seconds in the air.

Orville and Wilbur Wright were responsible for a host of aviation inventions, including wing warping, which provides lateral control and allows an airplane to bank left or right. They also invented the forward stabilizer, which controls the airplane's up and down movement, and the moveable rear rudder, which enables the pilot to counteract unwanted turns.

Further information about the Wright Flyer is available on the AIAA Wright Flyer homepage at:
<http://www.alumni.caltech.edu/~johnlatz/1903.html>

Wallops Shorts.....

School Visits

On April 30, **Jack Vieria** spoke to 4th grade classes at Pocomoke Middle School.

Also on April 30, **Rick Baldwin** spoke to seniors at the University of Maryland, Eastern Shore on environmental science.

Student Intern

Salisbury State University senior, **Barbara Clifford**, has been working with CSC personnel in environmental support for the past eight weeks.

NASA Tests Hair-Raising Technique To Clean Up Oil Spills

An Alabama hairdresser likes oily hair and is working with NASA to use human hair to soak up oil spills. Researchers at NASA's Marshall Space Flight Center are testing the hair-raising recovery technique for oil spilled in water.

The idea is the inspiration of Phillip McCrory. McCrory was watching television coverage of 1989's oil spill in Alaska's Prince William Sound. "I saw an otter being rescued whose fur was saturated with oil," said McCrory. "I thought, if animal fur can trap and hold spilled oil, why can't human hair?"

In a home experiment, McCrory stuffed five pounds of hair into a pair of pantyhose. He tied the ankles of the hosiery together to form a ring-shaped collection bundle. Then, filling his son's wading pool with water, he put the hair-filled ring of hosiery into the center of the pool and poured used motor oil into the middle.

McCrory found that human hair adsorbs — rather than absorbs — oil. That is, instead of bonding with the hair, the oil gathers in layers on the hair's surface. This allows for easy recovery of the oil and its reuse by simply squeezing it from the collection bundles.

McCrory contacted Marshall's Technology Transfer Office with the proposal that NASA test his idea under controlled laboratory conditions. Marshall agreed because its researchers believed it had potential use by NASA and other U.S. government agencies.

Successful preliminary field tests also influenced Marshall's decision to test McCrory's system further. Tests of the new system are expected to be completed later this spring.

May is National High Blood Pressure Month

The heart pumps blood through vessels to bring oxygen and nutrients to the body. Blood pressure is the force of the blood against the vessel walls. The more the pressure, the harder the heart has to work.

Blood pressure often goes up and down during the day. When it goes up and stays high, it is high blood pressure. The medical term is hypertension.

An easy test measures blood pressure. It uses an inflatable cuff around an arm. If the pressure is high, the test will be repeated on several days to get an accurate reading. The test gives two numbers. The

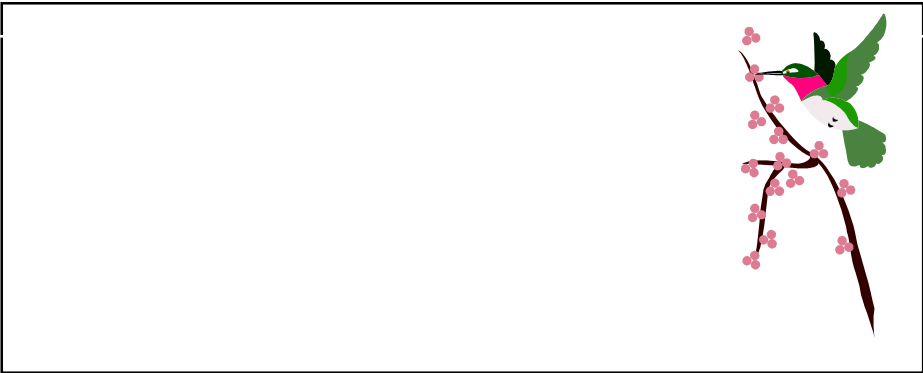
systolic pressure is the pressure of blood in the vessels as the heart beats. The diastolic pressure is the pressure of the blood between heartbeats. The numbers are usually written like a fraction with the systolic above or to the left. An example is 120/88 mm Hg (millimeters of mercury), a normal adult blood pressure. Both numbers count. Your blood pressure is high if the systolic pressure is 140 or above, or the diastolic pressure is 90 or above, or both are high.

If you do not know your blood pressure, you should have it taken. Those with high blood pressure often do not feel sick. In fact, high blood pressure is often called “the silent killer,” because it may cause no symptoms for a long time. Untreated, it can damage the kidneys and raise the chance of stroke, heart attack, or other cardiovascular (heart and vessels) problems. It causes three of every five cases of heart failure. Heart failure is a severe condition in which the heart cannot adequately supply the body with blood.

People who have diabetes and high blood pressure are at an even higher risk of stroke and heart and kidney problems than those who have only high blood pressure.

Take Control of Your Blood Pressure

- Lose weight if you are overweight.
- Become physically active.
- Choose foods low in salt and sodium.
- Limit your alcohol intake.
- If prescribed, take high blood pressure pills.
- If you smoke, STOP.
- Choose a variety of foods low in saturated fat, total fat, cholesterol and calories.



**National Day of Prayer
May 7, 1998
Noon
Main Base Flag Court
Guest Speaker, Howard Travers**

**Call for Applications
1998/99 Undergraduate Study
Education (USE) Program
Applications Due: May 29, 1998**

Applications are now being accepted for the USE Program. USE is one of the Center’s academic incentive programs offered to employees to support and encourage their self-development.

The USE Program is available to clerical, technicians, and wage-grade employees (GS-3 through GS-13, or wage-grade equivalent) that have demonstrated the ability to assume greater responsibility. This program provides an opportunity to take job-related, academic courses relevant to Goddard’s needs.

The Center funds tuition and required textbooks for USE Program participants. Also, with supervisory approval, a participant may be released for up to 15 hours per week from scheduled work, with pay, to attend and prepare for classes.

Employees selected will be eligible to attend courses for the fall 1998 through summer 1999 semesters. USE Program participants are expected to take at least six credits in both the fall and spring semesters.

To be eligible for this program, an applicant must be a full-time permanent employee in a nonprofessional position; have been a civil service employee at Goddard for at least a year; have accumulated a minimum of 6 semester hours of college credit; and be currently enrolled in an accredited college or university. Applicants must also have at least a 2.5 cumulative grade point average (GPA). If the overall GPA is less than 2.5, the GPA in the 12 most recently completed credits must be 2.5.

For a copy of the USE application package, call Nichole Richmond, x66-5757. Applications must be submitted by May 29, 1998 to Code 114, Employee and Organizational Development Office.

System Safety Fundamentals Course

The System Safety Fundamentals Course will be given at Wallops, 8 a.m. to 4:30 p.m., June 22 to June 26. The course is offered at no cost to NASA civil servant and contractor employees. Anyone interested in taking the course must a registration form, which requires a supervisor’s signature, by May 15.

For additional information contact Joe Drawdy, x1884. A complete course description and registration form can be found at: `file:\\wff-aurus\\public\\safrng\\Ssfund.doc`

**Cinco de Mayo
May 5, 1998
Building F-3
Beginning at 4:30 p.m.**



Food Music Fun
Bring a container of your favorite recipe for a chili contest.



People’s Choice prize will be awarded at 6:30 p.m.

Competitive Placement Plan Seminar

The Office of Human Resources will be offering seminars on the Competitive Placement Plan (CPP) on Tuesday, May 5, 1998 at 10 a.m. and 1 p.m. in Building F3. These seminars offer valuable information on the NASA merit promotion plan. Topics include:

- * How vacancies are filled,
- * Purpose of the CPP,
- * When use of the CPP is and is not required,
- * How to apply for CPP vacancy announcements,
- * How applicants are evaluated, including rating and ranking.

All employees are welcome to attend these seminars. For further information call Lisa Johnson, x1151.

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